range, brought to the close a day which the fortunate Fellows of the Chemical Society will certainly remember as one of the most instructive and enjoyable in their varied experiences.

NOTES

IT is with the greatest regret that we announce the death of Col. Strange, the Inspector of Instruments to the Indian Government, who died on the 9th instant. We shall give an obituary notice next week.

AN impression has become general, through the statements of our contemporaries, that the Sub-Wealden boring has been permanently stopped. This is not the case; for at the last meeting of the committee it was determined to carry it on to a depth of 2,000 feet, and if funds continue to flow in with the success which has previously characterised this movement, the boring, it is hoped, will be carried to the greatest depth attainable. The boring has now reached a depth of more than 1,900 feet, and was to be recommenced this week; should, however, a greater depth than 2,000 feet be determined on, it will be necessary to enlarge and reline the hole, which will cost from 600*l.* to 700*l.* Arrangements are being made by which it is hoped that a continuous core may be obtained from the present depth to that of 2,000 feet. We believe the Government grant of a pound a foot for each foot bored ceases at 2,000 feet, and, looking to the important light the prosecution of this boring will throw, not only on many theoretical questions of modern science, but on so many doubtful points of practical interest to England, it is sincerely to be hoped that the advisability of continuing the grant will be seriously considered by her Majesty's Ministers.

WE have received from Messrs. Allsopp and from Dr. Hassall letters referring to the statement noticed in our review of the work of the latter on Food (vol. xiii. p. 345), that the water used by the former in the brewing of their ales contains 7·65 grains of sulphate of zinc. Dr. Hassall expresses great annoyance that through some inadvertence on his part this unfortunate error, as it obviously is, should have been allowed to get into his book. He points out, what no doubt would be evident to most readers, that sulphate of *zinc* is a mistake for sulphate of *potash*. He assures us that no trace of so deleterious a substance as sulphate of zinc has been found in the water used by Messrs. Allsopp, and that their celebrated bitter beer consists solely of the products of malt and hops, and the constituents of pure spring-water. A further letter from Dr. Hassall, for which we have not space, will be found in our advertisement columns.

WE are informed that Mr. J. E. Harting is engaged in editing for the "Transactions of the Norfolk and Norwich Naturalists' Society" ten unpublished letters of Gilbert White, which have recently come to light. The originals are in the possession of the Rev. H. P. Marsham, of Rippon Hall, near Norwich, and are addressed to his great grandfather, Mr. Robert Marsham, F.R.S., of Stratton Strawless, Norfolk. It is expected that this interesting publication will appear about the end of this month or early in April.

MR. STANFORD has sent us specimens of some very fine maps recently published by him. Two of these are Orographical maps of Europe and of England, and the public in general and educationists in particular ought to be grateful to Mr. Stanford for thus putting within their reach a style of map which has hitherto been peculiar to Germany. The maps are really admirable specimens of a very difficult kind of cartography, and we have only one fault to find with them. Unfortunately, the midland levels are coloured green, while the sea is coloured blue, so that by gaslight the boundary cannot be distinguished. Why not have the nearest approximation to sea-level coloured white, the various higher levels of the land graduated shades of brown, and those of the sea by various shades of blue or green? This would be a simple and, we think, most intelligible plan. If the slight defect we mention—and it is only noticed under artificial light—were remedied, the maps would be nearly all that could be desired. The third map is a large-scale one, in four sheets, of British Guiana. The map is compiled from the surveys executed under H.M.'s Commission for 1841-44, and under the direction of the Geographical Society, for 1835-39, by Sir R. H. Schomburgk, revised and corrected to the present time by Mr. Cathcart Chalmers, Crown Surveyor of the Colony, and Mr. J. Gay Sawkins, Director of the Geological Survey of the West Indies and British Guiana, with additions by Mr. C. B. Brown. It will thus be seen that the map has been constructed on the latest and most trustworthy authorities. It is a curious fact that the boundaries between British Guiana and Venezuela on the one hand and Brazil on the other have never been properly adjusted.

WE have received a very important letter by Mr. Russell Government Astronomer at Sydney, which we regret that we have not space to reproduce *in extenso*. The letter refers to the excessively dry weather of Australia, which, indeed, has been so dry as to be really alarming, and reviews the results of rainfall observations made at Sydney during the last thirty-six years. This letter suggests to us that the unusual wet weather we have had here may be more than compensated by the excessively dry weather which has prevailed in Australia.

THE Duke of Richmond and Gordon stated in the House of Lords no Tuesday that the Vivisection question was under the consideration of the Government, but he could not say when any legislation would take place upon it.

A FEW days ago a meeting was held in Birmingham for the purpose of establishing a Philosophical Society, and it was found that the proposal met with very warm support. Some difference of opinion was expressed as to the propriety of including literary subjects in its programme, but the general feeling was in favour of keeping to a purely scientific course. A society of this kind is greatly wanted in this important centre, for science is represented there only by the Natural History Society, which, though it has done some good work, is found to have too limited a scope. With the prospect held out by the munificent founder of Mason's College for advanced scientific culture, there can be little doubt that such a society would do great good, and we wish it every success. A proposal for amalgamating the Natural History Society with the new Society has been made, and has been favourably entertained.

MR. R. W. CHEADLE is announced as having been successful in excavating from the well-known brick earth pit at Crayford a bone which was identified by Prof. Morris as the thigh-bone of a British species of lion. Mr. Cheadle found at the same time several rhinoceros' teeth in this cemetery of ancient life among the hop gardens of Kent.

PETERMANN'S *Mittheilungen* for March contains several important papers. H. Habenicht contributes a brief description to accompany a carefully, and notwithstanding its size, remarkably clear map of Europe, showing the distribution of the sedimentary rocks on that continent. A map of South New Guinea between 142° and 143° E. long. shows the course of the recently discovered Baxter River, accompanying which are accounts of the Macleay expedition and of Macfarlane and Stone's exploration of the Baxter River or Mai-Kassa. Lieut. Weyprecht continues his "Sketches from the Far North," in this part treating of the ice-pressure. The account of Lieut.-Col. Przewalsky's

travels in Mongolia and the Land of the Tunguts is continued also.

AT Monday's meeting of the Royal Geographical Society, the principal business was the reading of papers on the interior of New Guinea, by Mr. Stone and Mr. Macfarlane. The writers had found the coast district of New Guinea too barren "even for the cultivation of the banana," but concurred in stating that the country improved considerably as they travelled inland. There they found great fertility, a kind, hospitable people, and a country comparatively free from fever, whereas the coast was barren, the people were morose and warlike, and the climate was destructive of the health of Europeans.—No communication was made respecting Lieut. Cameron, but it was understood that at the last advices he was with his party at Loanda.

THE general staff of the German empire has published a report of experiments made in Germany on ballooning at the expense of the Imperial Government. The conclusions throw no new light on the subject, but the German officers believe that the mechanical direction of balloons is by no means an impossibility. They even suppose that the problem of ascending or descending without using ballast or the valve, is very likely to receive a speedy solution. They propose to the Government to determine by means of experiments what is the best diameter for the helix when it is applied to a balloon of a certain capacity. They propose also to try the efficacy of wings for propelling balloons. They are not of the common opinion that the diameter of balloons can be indefinitely enlarged.

MISS SHEEPSHANKS has presented to the Royal Astronomical Society 200 volumes of works on Astronomy, some of them very rare; and Lord Lindsay has presented a large and valuable collection of the late Mr. Carrington's MSS. on the subject of sun-spots.

AT the last regular meeting of the Berlin Geographical Society, Herr Kiefert read a paper on the African Expedition of Lieut. Cameron, which he described as epoch-making, and declared that the general results were the most important since Livingstone.

THE Museum of Paris has lost the services of two of its most eminent professors, M. Milne-Edwards in zoology, and M. Delafosse in mineralogy; they have been placed on the retired list on account of old age. M. Milne-Edwards has been succeeded by his own son, a promising naturalist, and M. Delafosse, by M. Decloizeaux, a member of the Institute.

ON the 4th inst. the Berlin University held an extraordinary meeting to celebrate the fiftieth anniversary of the day on which Prof. Dove was received a doctor. An address was handed to him by Professors Mommsen and Du Bois-Reymond. The Minister of Public Instruction was present, and a magnificent vase was presented to Dr. Dove on behalf of the Emperor of Germany. In the evening a banquet took place at the English Hotel. Among those present were Prof. Helmholtz and a number of other German scientific notabilities.

THE Société Française de Navigation Aérienne has awarded a gold medal and diploma "for devotion to science," to Mr. F. W. Brearey, honorary secretary to the Aeronautical Society of Great Britain.

THE change of Ministry has been completed in France, and M. Wallon is no longer the Minister of Public Instruction. The learned gentleman left behind many warm sympathisers. His successor appointed last Friday is Mr. Waddington, an Englishman by parentage, born in France in 1828, naturalised a Frenchman, and a member of the Senate, but a Protestant by religion, and educated at Rugby and Cambridge. Great efforts are likely to be made to secure for France competent representation at the forthcoming Scientific Loan Exhibition.

THE Cambridge Museums and Lecture-rooms Syndicate report the urgent necessity for increased accommodation in the departments of zoology, comparative anatomy, and physiology, and recommend that steps be at once taken to supply the want. They suggest the erection of a building on a site adjacent to the present museums, to consist of three floors, with cellars under the central portion.

M. HARENT, the director of a private institution, is now the President of the Municipal Council of Paris. He has deposited a formal proposition asking the Council to establish several meteorological observatories for the analysis of rain, water, air, electrical determinations, and ordinary barometer and temperature readings. All these establishments are to be modelled after that of Montsouris, but on a smaller scale.

THE Daily *Bulletin* of Weather Reports for March 1873 issued by the chief signal officer of the War Department of the United States, has been received. The publication gives on a reduced scale the whole of the tri-daily weather maps for the month, each map being accompanied with (1) the synopsis of the weather conditions, and (2) probabilities of the weather during the next twenty-four hours, drawn from these conditions, and stated on each map at the time of its publication, together with (3) a statement of the actual facts as they occurred with which the "forecasts" of the office may be compared. This fearless and straightforward course of exhibiting equally its successes and its failures, is deliberately adopted by the office in order to facilitate inquiry by scientific men, into the theories and causes which have led to these successes and failures, from which inquiries the practical work of the office cannot fail to reap most substantial benefit.

THE additions to the Zoological Society's Gardens during the past week include 171 Sand Lizards (*Lacerta agilis*) from Italy, presented by Mr. H. Negretti; two Forster's Milvagos (*Milvago australis*) from the Falkland Isles, presented by Lord Lilford; a Great Frigate Bird (*Frigata aquila*) from America, three Black-backed Geese (*Sarcidiornis melanota*) from India, a Gull-billed Tern (*Sterna anglica*), European, a Crested Hangnest (*Ostinops cristatus*), a Cayenne Lapwing (*Vanellus cayennensis*) from South America, an Ogilby's Rat Kangaroo (*Hypsiprymnus ogilbyi*), a Vulpine Phalanger (*Phalangista vulpina*) from Australia, purchased; a Jackal Buzzard (*Buteo jacal*) from Africa, deposited; a Yellow-footed Rock Kangaroo (*Petrogale xanthopus*).

SOCIETIES AND ACADEMIES

LONDON

Royal Society, Feb. 3.—On Formulæ of Verification in the Partition of Numbers, by J. W. L. Glaisher, M.A., F.R.S.

Feb. 17.—"Researches upon the Specific Volumes of Liquids." By T. E. Thorpe, Ph.D., F.R.S.E., Professor of Chemistry in the Yorkshire College of Science, Leeds.

II. *On the Specific Volumes of certain similarly-constituted Inorganic Chlorides.*

The results of the observations made by Pierre and Kopp upon the boiling-points, specific gravities, and thermal expansibilities of the trichlorides and tribromides of phosphorus, arsenic, and antimony, have led Kopp to suppose that the specific volumes of phosphorus, arsenic, and antimony, in their liquid combinations, may be identical. The same conclusion has been drawn with respect to tin, titanium, and silicon from Pierre's observations upon the tetrachlorides of these elements.

The common value of P, As, and Sb would appear to be about 27, that of Si, Ti, and Sn about 35. But on examining the details of the observations, it becomes evident that this conclusion is not strictly borne out by the results; the numbers obtained for the individual members of the group differ in many cases considerably from the common value, the divergences being far wider than could arise from errors of observation, either in the determination of the physical constants or in the estimation